

dimension  $H_B$ :

- b) an electrically insulative container disposed in the bias heater for receiving vaporizable solid organic material, the container being defined by side walls and a bottom wall, and the container side walls having a height dimension  $H_C$  which is greater than the height dimension  $H_B$  of the bias heater side walls;
- c) a vaporization heater disposed on upper side wall surfaces of the container, the vaporization heater defining a vapor efflux slit aperture extending into the container for permitting vaporized organic material to pass through the slit aperture and onto the surface of the structure, wherein the container side walls are taller than the bias heater side walls to electrically isolate the vaporization heater from the bias heater;
- d) a bias heater power supply for applying an electrical potential to the bias heater to cause bias heat to be applied to the solid organic material in the container, the bias heater providing a controlled bias temperature which is insufficient to cause the solid organic material to vaporize;
- e) a vaporization heater power supply for applying an electrical potential to the vaporization heater to controllably heat uppermost portions of the solid organic material in the container to vaporize the solid organic material and allow vaporized organic material to project onto the structure through the efflux slit aperture to provide an organic layer on the structure, wherein the vaporization heater power supply is separate from the bias heater power source; and
- f) means for providing relative motion between the vapor deposition source and the structure to provide a substantially uniform organic layer on the structure.

2. (Twice Amended) A thermal physical vapor deposition source for vaporizing solid organic materials and applying a vaporized organic material as a layer onto a surface of a structure in a chamber at reduced pressure in forming an organic light-emitting device (OLED), comprising:

- a) a bias heater defined by side walls and a bottom wall, the side walls having a height dimension  $H_B$ ;
- b) an electrically insulative container disposed in the bias heater for receiving vaporizable

solid organic material, the container being defined by side walls and a bottom wall, and the container side walls having a height dimension  $H_C$  which is taller than the height dimension  $H_B$  of the bias heater side walls:

- c) a vaporization heater disposed on upper side wall surfaces of the container, the vaporization heater defining a vapor efflux slit aperture extending into the container for permitting vaporized organic material to pass through the slit aperture and onto the surface of the structure, wherein the container side walls are taller than the bias heater side walls to electrically isolate the vaporization heater from the bias heater;
- d) a bias heater power supply for controllably applying an electrical potential to the bias heater in response to a control signal provided by a bias heater temperature measuring device to cause controlled bias heat to be applied to the solid organic material in the container, the controlled bias heat providing a bias temperature which is insufficient to cause the solid organic material to vaporize;
- e) a vaporization heater power supply for controllably applying an electrical potential to the vaporization heater in response to a control signal provided by a deposition rate-measuring device to cause controlled vaporization heat to be applied to uppermost portions of the solid organic material in the container, causing such uppermost portions to controllably vaporize so that vaporized organic material is projected onto the structure through the efflux slit aperture to provide an organic layer on the structure, wherein the vaporization heater power supply is separate from the bias heater power supply; and
- f) means for providing relative motion between the vapor deposition source and the structure to provide a substantially uniform organic layer on the structure.--